

Jamal Bouajjaj

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Education

University of New Haven | West Haven, CT 8/2022 → 5/2023
Master of Science in Electrical Engineering GPA: 4.0

- Research project: Wide-band digital pre-distortion
- Notable Courses: System On Chip, DSP2, VLSI Design, Wireless Communication, HDL, Random Processes

University of New Haven | West Haven, CT 8/2018 → 5/2022
Bachelor of Science in Electrical Engineering GPA: 3.88

- Senior Design project: Researched into HF communication for niche low-latency worldwide application
- Junior Design project: Implemented a LIFI transceiver circuit
- Notable Courses: DSP1, Autonomous Robotics, Intro to IOT, Random Signals, Embedded Systems, Computer Architecture

Professional Experience

Strain Measurement Devices | Wallingford, CT 5/2022 → Present
Part-Time Electrical Engineering

Strain Measurement Devices | Wallingford, CT 4/2019 → 5/2022
Electrical Engineering Intern

- Designed circuits and products for various applications such as a Bluetooth sensor, a non-invasive liquid detector, and a non-invasive flow meter
- Designed various internal testing fixtures and test software

Skills

- Circuit Design and PCB Layout: KiCad and Altium Designer
- Embedded Firmware: AVR, STM32, PIC, and MSP430 MCUs
- Languages: C, C++, Python, VHDL, Verilog, MATLAB, \LaTeX
- Mechanical Modeling: FreeCAD and Solidworks
- Misc Skills: RF Planning, Linux server management, SPICE simulation, ROS for robotics

Projects

Non-Invasive Flow Meter | *Electrical and Firmware Lead* 05/2022 → Present

- Designed the circuit for an ultrasonic flow meter that communicates over UART and ModBUS
- Programmed the MCU firmware for the sensor in C
- Programmed customer and internal test applications in Python

Wide-Band Digital Pre-distortion | *Researcher* 09/2022 → Present

- Researching into adaptive filtering methods to be added before a pre-distortion system for a wide-band amplifier
- Researched into current digital-predistortion techniques, with an example implementation in MATLAB
- Implemented an LMS algorithm for an amplifier's low pass characteristic in MATLAB

Mars URC Robotics Competition | *RF and Electrical Lead* 10/2022 → Present

- Collaborated with a 10-person team to design and build a rover to accomplish various tasks
- Calculated the RF budget link for the competition environment, and chose the best RF link given competition and time constraints
- Implemented a ROS package for controller motor drivers with a joystick

E-Ink Name Tag | *Full-Stack Designer* 05/2020 → Present

- Designed the e-ink display driver circuit in KiCAD
- Programmed the firmware, including low level drivers for the display and an SD Card
- Programmed a GUI application for uploading in tag images in Python